COMPLETE LISTING OF THE CLAIMS

Claim 1 (original): A visible image forming method for forming a visible image on an optical disk by an optical disk recording apparatus, which is designed for applying a laser beam onto an optical disk according to first recording data of a predetermined format to form pits having lengths specified by the first recording data, the method comprising:

a generating step for generating second recording data by embedding image formation data of a visible image in a part of a predetermined format which is the same as predetermined for the first recording data;

an extracting step for extracting the image formation data of the visible image from the second recording data of the predetermined format; and

a forming step for forming pits in the optical disk according to the extracted image formation data so as to form the visible image on the optical disk.

Claim 2 (original): The visible image forming method according to Claim 1, wherein the optical disk has a spiral guiding groove on a recording surface of the optical disk, the spiral guiding groove being divided substantially at an equal interval to define a sequence of regions along the spiral guiding groove, and wherein the image formation data of the visible image specifies the length of the pit to be formed in each region of the spiral guiding groove.

Claim 3 (original): The visible image forming method according to Claim 2, further comprising a converting step preceding the generating step for converting original image data

representing the visual image by rectangular coordinates into the image formation data specifying the length of the pit to be formed in each region of the spiral guiding groove.

Claim 4 (original): The visible image forming method according to Claim 1, wherein the predetermined format has blocks each having a plurality of frames, each frame having a region for containing main data to be recorded, and wherein the generating step embeds the image formation data of the visible image in a part or whole of the region of each frame.

Claim 5 (currently amended): A computer readable medium of an optical disk recording apparatus having a program embodied thereon, said optical disk recording apparatus being designed for applying a laser beam onto an optical disk according to first recording data of a predetermined format to form pits having lengths specified by the first recording data, the program being executable for causing the optical disk recording apparatus to perform a method of forming a visible image on an optical disk, said the method comprising:

a generating step for generating second recording data by embedding image formation data of a visible image in a part of a predetermined format which is the same as predetermined for the first recording data;

an extracting step for extracting the image formation data of the visible image from the second recording data of the predetermined format; and

a forming step for forming pits in the optical disk according to the extracted image formation data so as to form the visible image on the optical disk.

Claim 6 (original): A visible image forming system for forming a visible image on an optical disk by an optical pickup, which is designed for applying a laser beam onto an optical disk according to first recording data of a predetermined format to form pits having lengths specified by the first recording data, the system comprising:

a generating section that generates second recording data by embedding image formation data of a visible image in a part of a predetermined format which is the same as predetermined for the first recording data;

an extracting section that extracts the image formation data of the visible image from the second recording data of the predetermined format; and

a forming section that operates the optical pickup for forming pits in the optical disk according to the extracted image formation data so as to form the visible image on the optical disk.

Claim 7 (previously presented): The visible image forming method according to Claim 1, wherein the extracted image formation data represents a pit forming area in which predetermined pits are formed, and the forming step allows pit forming in an optical disk area specified by the pit forming area.

Claim 8 (previously presented): The visible image forming method according to Claim 1, wherein the extracted image formation data represents a period for which applying of the laser beam onto the optical disk is enabled, and the forming step allows pit forming for the period.

Claim 9 (previously presented): The visible image forming method according to Claim 8, wherein the forming step has a gate step for outputting the second recording data for the period

specified by the extracted image formation data, and a laser driving step for driving an optical pickup in accordance with the outputted second recording data such that the laser beam is applied onto the optical disk.

Claim 10 (previously presented): The visible image forming method according to Claim 1, wherein the optical disc is controlled by constant angular velocity.

Claim 11 (previously presented): The visible image forming method according to Claim 1, wherein the optical disc is controlled by constant linear velocity.

Claim 12 (previously presented): The visible image forming method according to Claim 1, wherein the image formation data is converted from rectangular coordinates to polar coordinates, and thereafter the image formation data of the polar coordinates is embedded in the predetermined format.

Claim 13 (previously presented): The visible image forming method according to Claim 1, wherein the image formation data is converted from rectangular coordinates to polar coordinates, then the image formation data of the polar coordinates is converted to CLV coordinates, and thereafter the image formation data of the CLV coordinates is embedded in the predetermined format.

Claim 14 (previously presented): The visible image forming method according to Claim 1, wherein 'the predetermined format is EFM frame data having at least main data and subcode data.

Claim 15 (previously presented): The visible image forming method according to Claim 1, wherein the predetermined format is Compact Disc standard format.

Claim 16 (previously presented): The visible image forming method according to Claim 1, wherein the optical disc is Compact Disc.

Claim 17 (previously presented): The visible image forming method according to Claim 1, wherein the optical disc is DVD disc.

Claim 18 (previously presented): The visible image forming method according to Claim 1, wherein the predetermined format is the same standard format for data to be recorded on the optical disk.

Claim 19 (previously presented): The visible image forming method according to Claim 1, wherein .the predetermined format has blocks each having a plurality of frames, each frame having a region for containing subcode data to be recorded, and wherein the generating step embeds the image formation data of the visible image in a part or whole of the subcode data.

Claim 20 (previously presented): The visible image forming method according to Claim 4, wherein the generating step embeds the image formation data of the visible image in a part or whole of the main data.

Claim 21 (previously presented): The visible image forming method according to Claim 20, wherein the image formation data of the visible image has gray scale data, the gray scale data specifying length of pits formed for each frame of the predetermined format.

Claim 22 (previously presented): The visible image forming method according to Claim 1, wherein the predetermined format has blocks each having a plurality of frames, each frame having a region for containing subcode data and main data to be recorded, and wherein the generating step embeds the image formation data of the visible image in the region of the subcode data of each frame, and embeds dummy data in the region of the main data of each frame.

Claim 23 (previously presented): The visible image forming method according to Claim 20, wherein the image formation data is previously rearranged in consideration of an interleave process.

Claim 24 (new): The computer readable medium according to Claim 5, wherein the extracted image formation data represents a pit forming area in which predetermined pits are formed, and the forming step allows pit forming in an optical disk area specified by the pit forming area.

Claim 25 (new): The computer readable medium according to Claim 5, wherein the extracted image formation data represents a period for which applying of the laser beam onto the optical disk is enabled, and the forming step allows pit forming for the period.

Claim 26 (new): The visible image forming method according to Claim 26, wherein the forming step has a gate step for outputting the second recording data for the period specified by the extracted image formation data, and a laser driving step for driving an optical pickup in accordance with the outputted second recording data such that the laser beam is applied onto the optical disk.

Claim 27 (new): The computer readable medium according to Claim 5, wherein the optical disc is controlled by constant angular velocity.

Claim 28 (new): The computer readable medium according to Claim 5, wherein the optical disc is controlled by constant linear velocity.

Claim 29 (new): The computer readable medium according to Claim 5, wherein the image formation data is converted from rectangular coordinates to polar coordinates, and thereafter the image formation data of the polar coordinates is embedded in the predetermined format.

Claim 30 (new): The computer readable medium according to Claim 5, wherein the image formation data is converted from rectangular coordinates to polar coordinates, then the image formation data of the polar coordinates is converted to CLV coordinates, and thereafter the image formation data of the CLV coordinates is embedded in the predetermined format.

Claim 31 (new): The computer readable medium according to Claim 5, wherein the predetermined format is EFM frame data having at least main data and subcode data.

Claim 32 (new): The computer readable medium according to Claim 5, wherein the predetermined format is Compact Disc standard format.

Claim 33 (new): The computer readable medium according to Claim 5, wherein the optical disc is Compact Disc.

Claim 34 (new): The computer readable medium according to Claim 5, wherein the optical disc is DVD disc.

Claim 35 (new): The computer readable medium according to Claim 5, wherein the predetermined format is the same standard format for data to be recorded on the optical disk.

Claim 36 (new): The computer readable medium according to Claim 5, wherein .the predetermined format has blocks each having a plurality of frames, each frame having a region for

containing subcode data to be recorded, and wherein the generating step embeds the image formation data of the visible image in a part or whole of the subcode data.

Claim 37 (new): The visible image forming method according to Claim 5, wherein the generating step embeds the image formation data of the visible image in a part or whole of the main data.

Claim 38 (new): The visible image forming method according to Claim 37, wherein the image formation data of the visible image has gray scale data, the gray scale data specifying length of pits formed for each frame of the predetermined format.

Claim 39 (new): The computer readable medium according to Claim 5, wherein the predetermined format has blocks each having a plurality of frames, each frame having a region for containing subcode data and main data to be recorded, and wherein the generating step embeds the image formation data of the visible image in the region of the subcode data of each frame, and embeds dummy data in the region of the main data of each frame.

Claim 40 (new): The visible image forming method according to Claim 37, wherein the image formation data is previously rearranged in consideration of an interleave process.

Claim 41 (new): The visible image forming system of Claim 6, wherein the extracted image formation data represents a pit forming area in which predetermined pits are formed, and the forming step allows pit forming in an optical disk area specified by the pit forming area.

Claim 42 (new): The visible image forming system of Claim 6, wherein the extracted image formation data represents a period for which applying of the laser beam onto the optical disk is enabled, and the forming step allows pit forming for the period.

Claim 43 (new): The visible image forming method according to Claim 42, wherein the forming section includes a gate for outputting the second recording data for the period specified by the extracted image formation data, and a laser driving section for driving an optical pickup in accordance with the outputted second recording data such that the laser beam is applied onto the optical disk.

Claim 44 (new): The visible image forming system of Claim 6, wherein the optical disc is controlled by constant angular velocity.

Claim 45 (new): The visible image forming system of Claim 6, wherein the optical disc is controlled by constant linear velocity.

Claim 46 (new): The visible image forming system of Claim 6, wherein the image formation data is converted from rectangular coordinates to polar coordinates, and thereafter the image formation data of the polar coordinates is embedded in the predetermined format.

Claim 47 (new): The visible image forming system of Claim 6, wherein the image formation data is converted from rectangular coordinates to polar coordinates, then the image formation data of the polar coordinates is converted to CLV coordinates, and thereafter the image formation data of the CLV coordinates is embedded in the predetermined format.

Claim 48 (new): The visible image forming system of Claim 6, wherein 'the predetermined format is EFM frame data having at least main data and subcode data.

Claim 49 (new): The visible image forming system of Claim 6, wherein the predetermined format is Compact Disc standard format.

Claim 50 (new): The visible image forming system of Claim 6, wherein the optical disc is Compact Disc.

Claim 51 (new): The visible image forming system of Claim 6, wherein the optical disc is DVD disc.

Claim 52 (new): The visible image forming system of Claim 6, wherein the predetermined format is the same standard format for data to be recorded on the optical disk.

Claim 53 (new): The visible image forming system of Claim 6, wherein .the predetermined format has blocks each having a plurality of frames, each frame having a region for containing subcode data to be recorded, and wherein the generating section embeds the image formation data of the visible image in a part or whole of the subcode data.

Claim 54 (new): The visible image forming method according to Claim 6, wherein the generating section embeds the image formation data of the visible image in a part or whole of the main data.

Claim 55 (new): The visible image forming method according to Claim 54, wherein the image formation data of the visible image has gray scale data, the gray scale data specifying length of pits formed for each frame of the predetermined format.

Claim 56 (new): The visible image forming system of Claim 6, wherein the predetermined format has blocks each having a plurality of frames, each frame having a region for containing subcode data and main data to be recorded, and wherein the generating section embeds the image formation data of the visible image in the region of the subcode data of each frame, and embeds dummy data in the region of the main data of each frame.

Claim 57 (new): The visible image forming method according to Claim 54, wherein the image formation data is previously rearranged in consideration of an interleave process.